

REMARKS

Claims 1, 4-20, 22-34, 47-50, and 52-56 are pending. Claims 1, 11, 20, 23, 30, 47, and 52 are currently amended. Claims 2-3, 21, 35-46, and 51 are canceled without prejudice. Claims 1, 4-20, 22-34, 47-50, and 52-56 are rejected under 35 U.S.C. § 103(a).

Independent claims 1 and 20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over applicant's admitted prior art (AAPA) in view of Scott et al. (U.S. Pat. No. 6,154,486). Depending claims 2-7 and 21-22 are further rejected under 35 U.S.C. § 103(a) as being unpatentable in view of De Gaudenzi et al. (U.S. Pat. No. 6,466,566). Claim 1 is rewritten to include the limitations of claims 2 and 3. Claims 2 and 3 are canceled. Claim 20 has been rewritten to include the limitations of claims 21 and 3. Claim 21 is canceled.

Independent claim 1, as amended, recites "A method of operating a wireless communications unit to request a connection with a base station, comprising the steps of: receiving, from the base station, a signal indicating at least one time slot within which a preamble may be transmitted by the wireless communications unit; selecting one of a plurality of orthogonal codes for the preamble; *generating a spread code using the selected orthogonal code repeated a selected number of repetitions; multiplying the spread code by a scrambling code associated with the base station, wherein the spread code has a length corresponding to a length of the scrambling code; and transmitting, to the base station, a preamble signal corresponding to the multiplied spread code.*"

Independent claim 20, as amended, recites "A wireless communications unit, comprising: . . . a programmable digital circuit, for performing digital operations upon signals to be transmitted and received, the programmable digital circuit programmed to request a connection with a base station by performing operations comprising: receiving, from the base station, a signal indicating at least one time slot within which a preamble may be transmitted by the wireless communications unit; selecting one of a plurality of orthogonal codes for the preamble; *generating a spread code using the selected orthogonal code repeated a selected*

number of repetitions; multiplying the spread code by a scrambling code associated with the base station, wherein the spread code has a length corresponding to a length of the scrambling code; and transmitting, to the base station, a preamble signal corresponding to the spread code.” The preamble of the present invention is described in detail at page 18, lines 9-25 of the instant specification.

Regarding the rejection of claims 2-3, Examiner states De Gaudenzi et al. teach “that many practical systems make use of sequences composed of a unique internal sequence (spread code) and an external sequence (col. 7, lines 30-40) where it is implicit that the internal sequence (spread code) is used to identify the mobile and the external sequence is used to identify the base station.” (page 4, paragraph 9). De Gaudenzi et al. specifically teach that the external sequence has the same timing and the same length as those of the internal sequence. (col. 7, lines 33-35). De Gaudenzi et al. fail to teach or suggest a “spread code arranged as a symbol of the selected code, repeated a selected number of repetitions” and “multiplying the spread code by a scrambling code associated with the base station, *wherein the repeated spread code has a length corresponding to a length of the scrambling code.*” Thus, De Gaudenzi et al. specifically teach away from the present invention.

Moreover, the disclosure of De Gaudenzi et al. is directed to interference cancellation without the need of a known training sequence. (col. 6, lines 16-21). This is a completely different purpose than the method of operating a wireless communications unit to request a connection with a base station as recited by claim 1 or transmitting, to the base station, a preamble signal corresponding to the spread code as recited by claim 20. By way of comparison, the present invention is directed to generating a preamble signal that is highly resistant to adverse Doppler effects. (page 9, lines 2-5). One of ordinary skill in the art at the time of the present invention would not think to combine De Gaudenzi et al. with AAPA or Scott et al. apart from improper hindsight in view of the instant specification. For all the foregoing reasons, therefore, applicants respectfully submit that claims 1, 4-10, 20, and 22 are patentable under 35 U.S.C. § 103(a).

Independent claim 25 is rejected under 35 U.S.C. § 103(a) as being unpatentable over applicant's admitted prior art (AAPA) in view of Scott et al. (U.S. Pat. No. 6,154,486) and further in view of De Gaudenzi et al. (U.S. Pat. No. 6,466,566). Independent claim 25 recites "A method of generating a preamble, comprising the steps of: selecting a first code from a plurality of orthogonal codes; *repeating the first code a plurality of times to produce a spread code having a predetermined length; and multiplying the spread code by a second code having the predetermined length.*" As previously discussed, De Gaudenzi et al. fail to teach or suggest this limitation. De Gaudenzi et al. specifically teach that their external sequence has the same timing and the same length as the internal sequence. (col. 7, lines 33-35). Moreover, the disclosure of De Gaudenzi et al. is directed to a completely different purpose of interference cancellation without the need of a known training sequence. (col. 6, lines 16-21). This is completely different from the method of generating a preamble as recited by claim 25. The present invention is directed to generating a preamble signal that is highly resistant to adverse Doppler effects. (page 9, lines 2-5). One of ordinary skill in the art at the time of the present invention would not think to combine De Gaudenzi et al. with AAPA or Scott et al. apart from improper hindsight in view of the instant specification. For all the foregoing reasons, therefore, applicants respectfully submit that claims 25-29 are patentable under 35 U.S.C. § 103(a).

Independent claims 11 and 47 and depending claim 51 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Scott et al. (U.S. Pat. No. 6,154,486) in view of Miller (U.S. Pat. No. 5,608,722). Claims 11 and 47 are rewritten to include the limitations of claim 51. Claim 51 is canceled.

Independent claim 23 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Scott et al. (U.S. Pat. No. 6,154,486) in view of Miller (U.S. Pat. No. 5,608,722) in further view of Bottomley (U.S. Pat. No. 5,790,537). Claim 23 is amended.

Independent claim 30 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Miller (U.S. Pat. No. 5,608,722) in view of Scott et al. (U.S. Pat. No. 6,154,486). Claim 30 is amended.

Independent claim 11, as amended, recites "A method of operating a base station to recover a preamble code transmitted by a wireless unit, comprising the steps of: receiving a signal corresponding to a preamble; arranging the signal into a bitstream *having a scrambling code with a length corresponding to a length of the preamble code*; de-interleaving bits from the bitstream, to group corresponding bits from each of a plurality of repetitions of a symbol length, into a plurality of groups; *despreading the bits of each of the plurality of groups to recover a plurality of symbol bits in a sequence, the sequence having a length corresponding to the length of the preamble code*; and correlating the sequence to identify a code, the code corresponding to one of a set of orthogonal codes."

Independent claim 23, as amended, recites "A base station for a wireless communications network, comprising: at least one base station antenna, for receiving and transmitting communications signals; . . . baseband circuitry . . . comprising: circuitry for encoding and modulating digital data received from the telephone network and to be transmitted from the base station via the antenna; demodulating and despreading circuitry, for recovering *a preamble code having a predetermined length* and transmitted by a wireless unit, *the preamble code including a scrambling code having the predetermined length*, comprising: a sequence of delay lines for receiving *a bitstream including a plurality of bit symbols having the predetermined length* corresponding to a received signal including the preamble code"

Independent claim 30, as amended, recites "A method of decoding a preamble, comprising the steps of: *detecting a scrambling code in a received signal, the scrambling code having a predetermined length*; *extracting a first number of repeated groups of signals having a second number of signals in each group from the received signal*; applying one

signal from each repeated group to each respective despreader circuit of a second number of despreader circuits, each despreader circuit producing a respective output signal; and comparing the second number of output signals to a plurality of codes.”

Independent claim 47, as amended, recites “A method of decoding a preamble from a remote transmitter, comprising the steps of: *receiving a first number of repeated groups of signals having a second number of signals in each group from a received signal having a predetermined length, the received signal comprising a scrambling code having the predetermined length; and correlating the first number of repeated groups of signals with a code having the second number of signals, the code corresponding to the remote transmitter.*”

As previously discussed, none of the cited references teach or suggest the limitations of claims 11, 23, 30, or 47, as amended. Examiner has cited De Gaudenzi et al. with regard to a similar limitation of claim 2. De Gaudenzi et al., however, specifically teach that their external sequence has the same timing and the same length as the internal sequence. (col. 7, lines 33-35). Moreover, the disclosure of De Gaudenzi et al. is directed to a completely different purpose of interference cancellation without the need of a known training sequence. (col. 6, lines 16-21). This is completely different from the purposes recited in claims 11, 23, 30, and 47. The present invention is directed to generating or decoding a preamble signal that is highly resistant to adverse Doppler effects. (page 9, lines 2-5). One of ordinary skill in the art at the time of the present invention would not think to combine De Gaudenzi et al. with AAPA or Scott et al. apart from improper hindsight in view of the instant specification. For all the foregoing reasons, therefore, applicants respectfully submit that claims 11-19, 23-24, 30-34, 47-50, and 52-56 are patentable under 35 U.S.C. § 103(a).

In view of the foregoing, applicant respectfully requests reconsideration and allowance of claims 1, 4-20, 22-34, 47-50, and 52-56. If the Examiner finds any issue that is unresolved, please call applicant's attorney by dialing the telephone number printed below.

Respectfully submitted,



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